

Choosing Wisely in the COVID-19 Era: Preventing Harm to Healthcare Workers

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With more than 3 million people diagnosed and more than 200,000 deaths worldwide at the time this article was written, coronavirus disease of 2019 (COVID-19) poses an unprecedented challenge to the public and to our healthcare system.¹ The United States has surpassed every other country in the total number of COVID-19 cases. Hospitals in hotspots are operating beyond capacity, while others prepare for a predicted surge of patients suffering from COVID-19. Now more than ever, clinicians need to prioritize limited time and resources wisely in this rapidly changing environment. Our most precious limited resource, healthcare workers (HCWs), bravely care for patients while trying to avoid acquiring the infection. With each test and treatment, clinicians must carefully consider harms and benefits, including exposing themselves and other HCWs to SARS-CoV-2, the virus causing this disease.

Delivering any healthcare service in which the potential harm exceeds benefit represents one form of overuse. In the era of COVID-19, the harmful consequences of overuse go beyond the patient to the healthcare team. For example, unnecessary chest computed tomography (CT) to help diagnose COVID-19 comes with the usual risks to the patient including radiation, but it may also reveal a suspicious nodule. That incidental finding can lead to downstream consequences, such as more imaging, blood work, and biopsy. In the current pandemic, however, that CT comes with more than just the usual risk. The initial unnecessary chest CT can risk exposing the transporter, the staff in the hallways and elevator en route, the radiology staff operating the CT scanner, and the maintenance staff who must clean the room and scanner afterward. Potential downstream harms to staff include exposure of the pulmonary and interventional radiology consultants, as well as the staff who perform repeat imaging after the biopsy. Evaluation of the nodule potentially prolongs the patient's stay and exposes more staff. Clinicians must weigh the benefits and harms of each test and treatment carefully with consideration of both the patient and the staff involved. Moreover, it may turn out

that the patient and staff without symptoms of COVID-19 may pose the most risk to one another.

RECOMMENDATIONS

Choosing Wisely® partnered with patients and clinician societies to develop a Top 5 recommendations list for eliminating unnecessary testing and treatment. Our multi-institutional group from the High Value Practice Academic Alliance proposed this Top 5 list of overuse practices in hospital medicine that can lead to harm of both patients and HCWs in the COVID-19 era (Table). The following recommendations apply to all patients with unsuspected, suspected, or confirmed SARS-CoV-2 infection in the hospital setting.

- Do not obtain nonurgent labs in separate blood draws if they can be batched together.

This recommendation expands on the original Society of Hospital Medicine Choosing Wisely recommendation: *Don't perform repetitive complete blood count and chemistry testing in the face of clinical and lab stability.*² Aside from patient harms such as pain and hospital-acquired anemia, the risk of exposure to HCWs who perform phlebotomy (phlebotomists, nurses, and other clinicians), as well as staff who transport, handle, and process the bloodwork in the lab, must be minimized. Most prior interventions to eliminate unnecessary bloodwork focused on the number of lab tests,³ but some also aimed to batch nonurgent labs together to effectively reduce unnecessary needlesticks (*"think twice, stick once"*).⁴ This concept can be brought into this pandemic to provide safe and appropriate care for both patients and HCWs.

- Do not use bronchodilators unless there is active obstructive airway disease, and if needed, use metered dose inhalers instead of nebulizers.

We do not recommend using bronchodilators to treat COVID-19 symptoms unless patients develop acute bronchospastic symptoms of their underlying obstructive airway disease.⁵ When needed, use metered dose inhalers (MDIs),⁶ if available, instead of nebulizers because the latter potentiates aerosolization that could lead to higher risk of spreading the infection. The risk extends to respiratory technicians and nurses who administer the nebulizer, as well as other HCWs who enter the room during or after administration. The Centers for Disease Control and Prevention (CDC) considers nebulized bronchodilator therapy a "high-risk" exposure for HCWs not wearing the proper personal protective equipment.⁷ Moreover, MDI therapy

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TABLE. Top 5 Choosing Wisely COVID-19 Recommendations for Hospital Medicine and Their Categories of Risk

Recommendation	Aerosolization	Room Contamination	Staff exposure
Do not obtain nonurgent labs in separate blood draws if they can be batched together.			Phlebotomist, laboratory
Do not use bronchodilators unless there is active obstructive airway disease, and if needed, use MDIs instead of nebulizers.	X		Respiratory tech or nurse, staff in room during or after administration
Do not use PA and lateral CXR as initial imaging. Use a portable CXR instead.		X	Transporter, staff en route, radiology technicians
Avoid in-person evaluations in favor of virtual communication unless necessary.			All HCWs
Do not delay goals of care conversations for hospitalized patients who are unlikely to benefit from life-sustaining treatments.	X		Emergency code team, ICU team

Abbreviations: CXR, chest X-ray; HCW, healthcare worker; ICU, intensive care unit; MDI, metered dose inhaler; PA, posteroanterior

produces equivalent outcomes to nebulized treatments for patients who are not critically ill.⁶ Unfortunately, the supply of MDIs during this crisis has not kept up with the increased demand.⁸

There are no clear guidelines for reuse of MDIs in COVID-19; however, options include labeling patients' MDIs to use for hospitalization and discharge or labeling an MDI for use during hospitalization and then disinfecting for reuse. For safety reasons, MDIs of COVID-19 patients should be reused only for other patients with COVID-19.⁸

- Do not use posteroanterior and lateral chest X-ray as initial imaging. Use a portable chest X-ray instead.

The CDC does not currently recommend diagnosing COVID-19 by chest X-ray (CXR).⁷ When used appropriately, CXR can provide information to support a COVID-19 diagnosis and rule out other etiologies that cause respiratory symptoms.⁹ Posteroanterior (PA) and lateral CXR are more sensitive than portable CXR for detecting pleural effusions, and lateral CXR is needed to examine structures along the axis of the body. Portable CXR also may cause the heart to appear magnified and the mediastinum widened, the diaphragm to appear higher, and vascular shadows to be obscured.¹⁰ The improved ability to detect these subtle differences should be weighed against the increased risk to HCWs required to perform PA and lateral CXR. A portable CXR exposes a relatively smaller number of staff who come to the bedside versus the larger number of people exposed in transporting the patient out of the room and into the hallway, elevator, and the radiology suite for a PA and lateral CXR.

- Avoid in-person evaluations in favor of virtual communication unless necessary.

To minimize HCW exposure to COVID-19 and optimize infection control, the CDC recommends the use of telemedicine when possible.⁷ Telemedicine refers to the use of technology to support clinical care across some distance, which includes video visits and remote clinical monitoring. At the time of writing, the Centers for Medicare & Medicaid Services had waived the rural site of care requirement for Medicare beneficiaries, granted 49 Medicaid waivers to states to enhance flexibility, and (at least temporarily) added inpatient care to the list of

reimbursed telemedicine services.¹¹ Funding for expanded coverage under Medicare is included in the recent Coronavirus Preparedness and Response Supplemental Appropriations Act.¹² These federal changes open the door for commercial payers and state Medicaid programs to further boost telemedicine through reimbursement parity to in-person visits and other coverage policies. Hospitalists can ride this momentum and learn from ambulatory colleagues to harness the power of telemedicine and minimize unnecessary face-to-face interactions with patients who are suspected or confirmed to have COVID-19.¹³ Even if providers have to enter the patient's room, telemedicine may still allow for large virtual family meetings despite strict visitor restrictions and physical distance with loved ones. If in-person visits are necessary, only one designated person should enter the patient's room instead of the entire team.

- Do not delay goals of care conversations for hospitalized patients who are unlikely to benefit from life-sustaining treatments.

The COVID-19 pandemic amplifies the need for early goals of care discussions. Mortality rates range higher with acute respiratory distress syndrome from COVID-19, compared with other etiologies, and is associated with extended intensive care unit stays.¹⁴ The harms extend beyond the patient and families to our HCWs through psychological distress and heightened exposure from aerosolization during resuscitation. Advance care planning should center on the values and preferences of the patient. Rather than asking if the patient or family would want certain treatments, it is crucial for clinicians to be direct in making do-not-resuscitate recommendations if deemed futile care.¹⁵ This practice is well within legal confines and is distinct from withdrawal or withholding of life-sustaining resources.¹⁵

CONCLUSION

HCWs providing inpatient care during this pandemic remain among the highest risk for contracting the infection. As of April 9, 2020, nearly 9,300 HCWs in the United States have contracted COVID-19.¹⁶ One thing remains clear: If we want to protect our patients, we must start by protecting our HCWs. We must

think critically to evaluate the potential harms to our extended healthcare teams and strive further to eliminate overuse from our care.

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